

In 1993, President Clinton challenged Federal facilities to reduce their toxic chemical releases by 50 percent by 1999. DoD met the goal in 1996, 3 years ahead of the President's goal.

Meeting the goal has not stopped us from continuing to reduce our toxic releases. By the end of 1998, we had eliminated 64.8 percent of our toxic chemical releases. Even as the U.S. Environmental Protection Agency added over 286 chemicals to the list of those required to be reported, DoD has continued to reduce our TRI emissions.

DoD's 1997 on-site releases to air, water, land and underground injection totaled 2.9 million pounds, while nationwide on-site releases for 1997 were 2.12 billion pounds. As illustrated in Figure 29 on page 52, DoD is responsible for only 0.14 percent of the annual total.

This report summarizes the DoD Toxic Release Inventory (TRI) data for 1998, as well as trend data for 1994 through 1997.

Executive Order Reduction Program

In August 1993, the President issued Executive Order (E.O.) 12856, Federal Compliance with Right-to-Know Laws and Pollution Prevention Requirements. This Executive Order requires Federal agencies to comply with the Emergency Planning and Community Right-to-Know Act (EPCRA) of 1986 and the Pollution Prevention Act of 1990. In Executive Order 12856, the President challenged Federal agencies to be more open with the public about releases of toxic chemicals, to reduce these releases 50 percent by 1999, and to aggressively use pollution prevention approaches to minimize the Federal Government's impact on the environment.

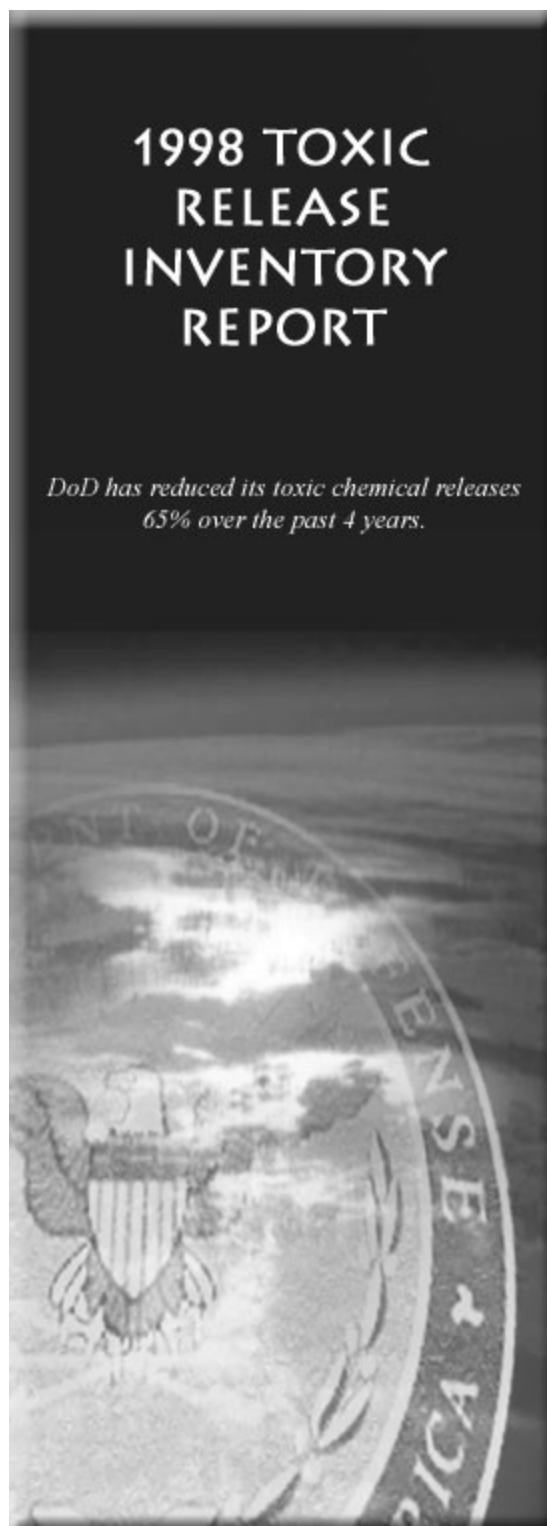
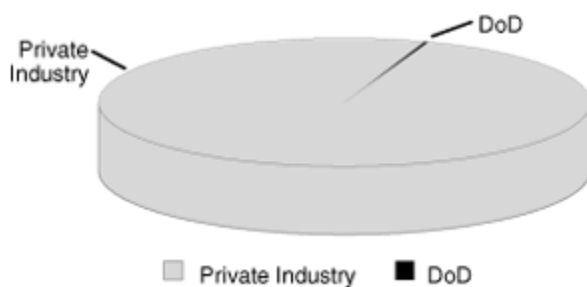


Figure 29
DoD vs. Private Industry On-Site Releases



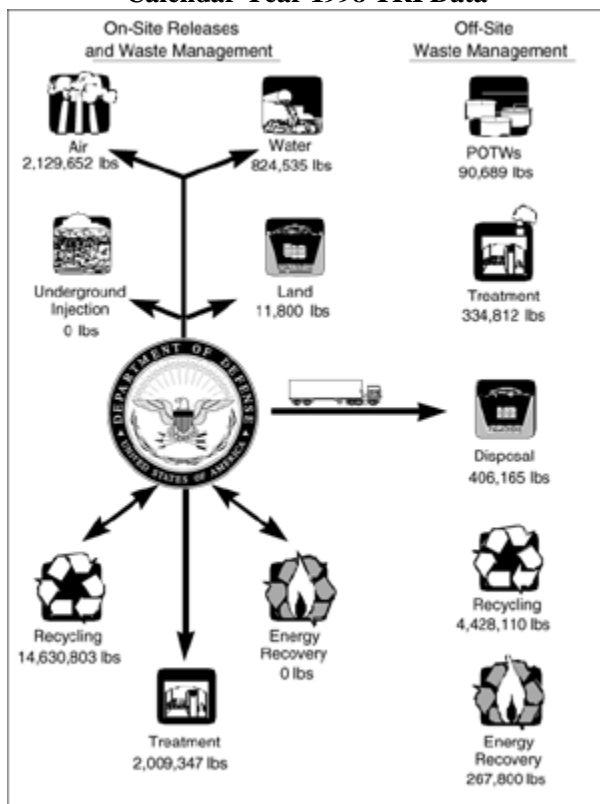
1998 Toxic Release Inventory Data

In 1994, DoD released and transferred off-site 10.8 million pounds of toxic chemicals. By 1998, the amount released and transferred amounted to only 3.8 million pounds—64.8 percent less than was released and transferred in 1994.

Figure 30 shows the amounts and types of releases, recycling, energy recovery, and off-site transfers associated with DoD's 1998 TRI reporting. The terms used are defined at the end of this report. Figure 31 provides a comparison of the 1994 through 1998 baseline and illustrates the change in reportable quantities that comprise the baseline.

In 1998, 69 installations met TRI reporting thresholds for one or more toxic chemicals. Each installation filed a Form R for each reportable chemical with U.S. EPA and the state in which it is located. In total, DoD filed 215 Form Rs for 1998.

Figure 30
Calendar Year 1998 TRI Data



Distribution of Chemical Reductions

The majority of DoD's toxic chemical releases and off-site transfers involve a limited number of toxic chemicals. These chemicals are used throughout industry and DoD in a variety of maintenance operations, including painting, paint stripping, cleaning, degreasing, and deicing, as well as in manufacturing munitions. In DoD's 1994 TRI Report, the top 10 chemicals released or transferred accounted for 72 percent of the baseline (see Table 1, page 56). Since 1994, DoD has made significant reductions in the release of these chemicals. These same chemicals accounted for 48 percent of the baseline in 1998.

This year's report also includes the top 10 installations and chemicals for DoD and the Services according to 1998 releases. This data is included to show a snapshot of DoD's current TRI profile and to compare the current environment to that of 1994. Some installations and chemicals have been reduced enough to no longer be in the top 10, and some, due to changes in reportable chemicals and relative release amounts, have taken their place.

Form R: A reporting form used by installations for each chemical they manufacture, process, or otherwise use in excess of reporting thresholds.

Figure 31
DoD TRI Reportable Quantities 1994 to 1998
(thousands of pounds)

Category	1994	1995	1996	1997	1998	94-98%
On-site to Water	90,629	359,994	344,137	1,130,764	824,535	810%
On-site to Air	6,986,203	4,990,877	3,452,010	2,739,503	2,129,652	-70%
On-site Underground Injection	390	-	-	-	-	-100%
On-site to Land	113,714	28,945	32,054	101,335	11,800	-90%
On-site to POTW	95,987	11,104	56,219	73,970	90,689	-6%
On-site to Treatment	1,395,277	804,331	503,895	360,022	334,812	-76%
On-site to Disposal	2,106,736	670,105	518,953	309,443	406,165	-81%
Total	10,790,930	6,865,356	4,907,267	4,715,036	3,797,652	-65.00%

Important Terms

Emergency Planning and Community Right-to-Know Act

Requires industry to publicly report their annual toxic chemical releases (both routine and accidental) and off-site transfers to EPA and state governments. Established the Toxic Release Inventory (TRI).

Toxic Release Inventory

EPA compiles toxic release information in the Toxic Release Inventory database. This provides members of the public with information on any chemical releases in their communities and provide EPA with information that determines the need for future regulations.

Pollution Prevention Act of 1990

Requires manufacturers to first prevent and reduce waste at the source before considering options for recycling, treatment, or disposal.

Executive Order 12856

Required Federal facilities, including the Department of Defense, to comply with EPCRA and the Pollution Prevention Act of 1990. Set a goal for Federal facilities to reduce the emissions reported from the 1994 baseline by 50 percent by 1999.

icals and relative release amounts, have taken their place. The relative scale of chemical releases of the top 10 toxic chemicals has changed drastically since 1994. In 1994, the top 10 chemicals accounted for 7.8 million pounds of toxic chemical out of a total of 10.8 million pounds released. In 1998, the original top 10 chemicals amounted to only 1.8 million pounds out of a total of 3.8 million pounds while the new top 10 account for only 3.0 million pounds. In addition, the scale of the differences between the top 10 chemicals has dropped drastically. In 1994, a total of 2.2 million pounds of dichlormethane, DoD's most released chemical was released. In 1998, the most frequently released chemical was nitrate compounds, and a total

of .8 million pounds of this chemical. This represents a 36 percent reduction in the volume of the most released chemical. DoD installations reported 51 different TRI chemicals released or transferred in 1998, reduced from 74 chemicals reported in 1994, and 55 chemicals in 1997. DoD has a number of initiatives underway to further reduce the use of these chemicals.

Reductions at Individual Installations

As in 1997 and 1996, DoD's large maintenance and depot operations, primarily those engaged in overhauling and repairing aircraft and ammunition manufacturing, had the largest reported volumes of DoD releases and transfers (See Table 2, page 56). DoD has implemented strong pollution prevention programs at these top 10 facilities, reducing releases and transfers 71.4 percent from 1994 to 1998.

Reasons for DoD's TRI Reduction

Our dramatic 64.8 percent reduction in TRI releases and transfers over the past 5 years is due to three primary factors:

- DoD's emphasis on pollution prevention programs
- Production changes and base closures
- Improved reporting and more accurate accounting of material.

Large industrial installations have achieved significant reductions in their TRI releases and transfers, while their production levels remained stable or increased. Tinker Air Force Base, which was previously the installation with the highest toxic release levels, reduced chemical releases by 79.3 percent between 1994 and 1998 and is now fourth in the list of the top 10 installations. Similarly, Air Force Plant 6, fourth on the list of top 10 installations in 1994, reduced its toxic releases 87 percent over the

Figure 32
Specific Facilities Closed 1994-1998

<p style="text-align: center;"><u>Army</u></p> <p style="text-align: center;"><i>Kansas City Ammunition Plant, Kansas · Longhorn Ammunition Plant, Texas (layaway status) Stratford Army Engine Plant, Connecticut · Sunflower AAP, Kansas</i></p>
<p style="text-align: center;"><u>Navy</u></p> <p style="text-align: center;"><i>Naval Air Station Alameda, California · Naval Shipyard Long Beach, California · Naval Shipyard Philadelphia, Pennsylvania · NAWC Trenton, New Jersey · Hercules' Corporation, McGregor, Texas (GOCO*) · Northrop Grumman Calverton, Maryland (GOCO) · Northrop Grumman Bethpage, Maryland (GOCO)</i></p>
<p style="text-align: center;"><u>DLA</u></p> <p style="text-align: center;"><i>Defense Depot Ogden, Utah · William Langer Jewel Bearing Plant, North Dakota</i></p>
<p style="text-align: center;"><u>Air Force</u></p> <p style="text-align: center;"><i>None</i></p> <p style="text-align: center;">* GOCO = Government-Owned, Contractor-Operated Facility</p>

past 5 years and is no longer one of the top 10 installations. Four other installations, Army Pine Bluff Arsenal, Kelly Air Force Base, McClellan Air Force Base, and Naval Air Station Jacksonville, have also been removed from the top 10 list. In addition, 5 toxic chemicals on the list of top 10 chemicals in 1994 are no longer on the top 10 list. DoD has focused its efforts on these major installations and its large-use chemicals because 72 percent of DoD's releases and transfers consisted of 10 chemicals, and the top 10 installations accounted for 50 percent of the releases and transfers in 1994.

Changes in DoD activity levels also contributed to the reductions in TRI releases and transfers, particularly in 1995. The closing of several bases and government-owned, contractor-operated (GOCO) facilities accounts for changes in TRI reportable quantities (Figure 32).

Finally, improved reporting methods and more accurate accounting for material accounts for some of the reductions. EPA's Toxic Release Inventory reporting program is constantly evolving. The Agency adds chemicals and chemical categories, newly regulated facilities, and new data elements.

Regulated facilities must report all new TRI information in the year for which the requirements are effective. For example, on February 23, 1999, EPA added several new persistent bioaccumulative toxic (PBT) chemicals to the TRI list of reportable chemicals and established lower reporting thresholds for certain of those chemicals. The additions are effective for the year 2000 reporting cycle. EPA also responds to petitions from interested parties and periodically removes (delists) or modifies the reporting requirement for toxic chemicals. In addition to these changes, EPA allows TRI reporting facilities to submit revisions to prior year reports.

An Explanation of Revised Data

Some readers may notice minor changes in values for certain chemicals and installations that had been included in previous reports. These changes have been incorporated in the current report in response to Form R revisions submitted to EPA following the original publication of data. DoD is including these revisions in the interest of ensuring accurate reporting; they do not significantly affect overall DoD baselines.

Note: In 1995, EPA delisted all non-aerosol forms of hydrochloric acid (HCl) as reflected in the Top 10 Chemical charts below. However, the aerosol forms of HCl remain reportable and thus appear on the 1998 Top 10 Chemical Snapshot lists.

DoD COMPONENT DATA

Table 1. Change in Top 10 DoD Chemical Releases and Transfers in Pounds

	1994	1995	1996	1997	1998	94-98%
DICHLOROMETHANE	2,235,670	1,617,221	967,859	761,088	671,307	-70%
METHYL ETHYL KETONE	1,504,895	1,097,024	936,920	622,787	621,515	-59%
1,1,1-TRICHLOROETHANE	1,232,070	751,890	283,334	217,171	34,335	-97%
ETHYLENE GLYCOL	537,125	329,919	292,700	132,007	175,611	-67%
TOLUENE	445,350	234,517	194,972	126,245	103,489	-77%
PHENOL	411,988	266,784	124,235	87,281	76,791	-81%
ZINC COMPOUNDS	409,180	52,738	34,171	28,526	63,395	-85%
TETRACHLOROETHYLENE	359,039	217,682	242,049	195,572	69,838	-81%
HEXACHLOROETHANE	351,370	56,112	23,461	-	-	-100%
HYDROCHLORIC ACID	298,000	Delisted	Delisted	Delisted	Delisted	
TOTAL	7,784,687	4,623,887	3,099,701	2,170,677	1,816,281	-77%

Table 2. Change in Top 10 DoD Installations Releases and Transfers in Pounds

	1994	1995	1996	1997	1998	94-98%
TINKER AFB	1,569,614	1,080,881	728,670	520,020	325,423	-79%
ROBINS AFB	776,616	578,562	334,898	403,058	368,442	-53%
ARMY PINE BLUFF ARSENAL	725,534	253,949	47,011	-	-	-100%
AF PLANT 06	554,555	507,909	292,613	133,400	71,924	-87%
ANNISTON ARMY DEPOT	527,591	428,840	225,446	245,617	366,481	-31%
VOUGHT AIRCRAFT CO	462,481	496,710	249,900	256,800	134,170	-71%
HILL AFB (Ogden)	367,909	263,560	294,815	234,029	250,301	-32%
KELLY AFB	342,871	227,663	144,014	100,850	42,500	-88%
MCCLELLAN AFB	340,750	231,800	279,100	162,161	64,100	-81%
NAS JACKSONVILLE	325,648	247,896	217,041	77,000	88,676	-73%
TOTAL	5,993,569	4,317,770	2,813,508	2,132,935	1,712,017	-71%

Table 3. Top 10 1998 DoD Chemicals
(Pounds released)

NITRATE COMPOUNDS	820,323
DICHLOROMETHANE	671,307
METHYL ETHYL KETONE	621,515
ETHYLENE GLYCOL	175,611
N-BUTYL ALCOHOL	157,191
HYDROCHLORIC ACID (1995 AND AFTER "ACID AEROSOLS" ONLY)	130,000
XYLENE (MIXED ISOMERS)	124,351
TOLUENE	103,489
METHYL ISOBUTYL KETONE	98,355
PHOSPHORIC ACID	94,878

Table 4. Top 10 1998 DoD Installations
(Pounds released)

RADFORD ARMY AMMUNITION PLANT	858,125
ROBINS AFB	368,442
ANNISTON ARMY DEPOT	366,481
TINKER AFB	325,423
OGDEN AIR LOGISTICS CENTER (Hill AFB)	250,301
PUGET SOUND NAVAL SHIPYARD	199,373
NORTHROP GRUMMAN CORP (VOUGHT)	134,170
NAS NORTH ISLAND	109,405
ARNOLD AFB	94,779
WATERVLIET ARSENAL	91,282

Army TRI Data

Table 1. Change in Top 10 Army Chemical Releases and Transfers in Pounds

	1994	1995	1996	1997	1998	94-98%
ZINC COMPOUNDS	368,971	20,008	31,171	3,428	32,998	-91%
HEXACHLOROETHANE	351,370	56,112	23,461			-100%
METHYL ETHYL KETONE	230,817	152,486	103,353	65,994	85,359	-63%
1,1,1-TRICHLOROETHANE	226,377	137,450	86,833	40,719	22,335	-90%
TRICHLOROETHYLENE	214,223	148,508	40,000	71,028	34,253	-84%
DICHLOROMETHANE	186,409	150,300	86,990	115,002	162,155	-13%
PHOSPHORIC ACID	135,990	48,410	51,177	44,783	94,434	-31%
ETHYLENE GLYCOL	121,059	194,648	85,073	35,039	20,366	-83%
CHLORINE	67,470	11,345	5,418	16,838	21,713	-68%
CHROMIUM COMPOUNDS	67,413	48,996	61,499	48,159	31,738	-53%

Table 2. Change in Top 10 Army Installation Releases and Transfers in Pounds

	1994	1995	1996	1997	1998	94-98%
ARMY PINE BLUFF ARSENAL	725,534	253,949	47,011			-100%
ANNISTON ARMY DEPOT	527,591	428,840	225,446	245,617	366,481	-31%
LETTERKENNY ARMY DEPOT	144,485	109,693	39,621	18,968	27,804	-81%
ARMY WATERVLIT ARSENAL	135,075	46,144	82,375	96,543	91,282	-32%
RED RIVER ARMY DEPOT	117,864	81,798	45,778	48,525	19,092	-84%
HOLSTON ARMY AMMUNITION PLANT	101,900	322,200	236,260	246,100	55,056	-46%
LAKE CITY ARMY AMMUNITION PLANT	83,911	67,497	49,041	42,662	68,012	-19%
FORT HOOD	57,550	45,600	686	686	61	-100%
STRATFORD ENGINEERING PLANT	55,441	24,501	23,701	-	-	-100%
ROCK ISLAND ARSENAL	52,000	14,500	-	-	-	-100%

Table 3. Top 10 1998 Army Chemicals
(Pounds released)

NITRATE COMPOUNDS	698,623
DICHLOROMETHANE	162,155
HYDROCHLORIC ACID (1995 AND AFTER "ACID AEROSOLS" ONLY)	130,000
PHOSPHORIC ACID	94,434
METHYL ETHYL KETONE	85,359
LEAD COMPOUNDS	48,722
FORMIC ACID	40,640
TRICHLOROETHYLENE	34,253
ZINC COMPOUNDS	32,998
XYLENE (MIXED ISOMERS)	32,988

Table 4. Top 10 1998 Army Installations
(Pounds released)

RADFORD ARMY AMMUNITION PLANT	858,125
ANNISTON ARMY DEPOT	366,481
WATERVLIT ARSENAL	91,282
LAKE CITY ARMY AMMUNITION PLANT	68,012
HOLSTON ARMY AMMUNITION PLANT	55,056
FORT LEWIS	52,881
LETTERKENNY ARMY DEPOT	27,804
RED RIVER ARMY DEPOT	19,092
IOWA ARMY AMMUNITION PLANT	14,925
FORT BENNING INFANTRY CENTER	14,305

Navy TRI Data

Table 1. Change in Top 10 Navy Chemical Releases and Transfers in Pounds

	1994	1995	1996	1997	1998	94-98%
1,1,1-TRICHLOROETHANE	596,172	438,269	120,000	135,300		-100%
DICHLOROMETHANE	358,283	252,221	161,750	57,310	95,789	-73%
METHYL ETHYL KETONE	288,488	231,715	198,900	90,610	163,971	-43%
N-BUTYL ALCOHOL	184,055	131,463	137,372	126,837	157,191	-15%
NITRIC ACID	160,881	14,166	10,416	52,003	13,664	-92%
XYLENE (MIXED)	130,312	64,455	52,306	119,244	87,563	-33%
FREON 113	129,933	21,925	51,547			-100%
TOLUENE	92,078	15,352	29,959	32,800	26,500	-71%
PHENOL	48,068	31,949	31,490	-	9,950	-79%
COPPER	37,785	46,134	29,600	30,263	36,407	-4%

Table 2. Change in Top 10 Navy Installation Releases and Transfers in Pounds

	1994	1995	1996	1997	1998	94-98%
NORTHROP GRUMMAN CORP (VOUGHT)	462,481	496,710	249,900	256,800	134,170	-71%
NAS JACKSONVILLE	325,648	247,896	217,041	77,000	88,676	-73%
NAS ALAMEDA	227,500	-	-	-	-	-100%
NORFOLK NAVAL SHIPYARD	186,090	65,666	53,980	62,120	79,458	-57%
GRUMMAN AEROSPACE CORP, BETHESDA	184,602	-	-	-	-	-100%
PUGET SOUND NAVAL SHIPYARD	178,400	147,041	139,800	186,100	199,373	12%
NAVAL BASE NORFOLK	132,325	74,971	59,800	21,380	14,530	-89%
PHILADELPHIA NAVAL SHIPYARD	129,340	73,870	-	-	-	-100%
NAWC PATUXENT RIVER	76,174	-	-	-	-	-100%
NAVAL WEAPONS IND RESERVE PLANT	73,016	24,596	-	-	-	-100%

Table 3. Top 10 1998 Navy Chemicals
(Pounds released)

METHYL ETHYL KETONE	163,971
N-BUTYL ALCOHOL	157,191
DICHLOROMETHANE	95,789
XYLENE (MIXED ISOMERS)	87,563
COPPER TOTAL	36,407
ZINC COMPOUNDS	30,397
ETHYLENE GLYCOL	28,130
COPPER COMPOUNDS	27,512
TOLUENE	26,500
CHROMIUM COMPOUNDS	25,600

Table 4. Top 10 1998 Navy Installations
(Pounds released)

PUGET SOUND NAVAL SHIPYARD	199,373
NORTHROP GRUMMAN CORP (VOUGHT)	134,170
NAS NORTH ISLAND	109,405
NAS JACKSONVILLE	88,676
NORFOLK NAVAL SHIPYARD	79,458
NAVSTAT SAN DIEGO	36,050
PEARL HARBOR NAVAL SHIPYARD	28,000
NAS CORPUS CHRISTI	25,314
NAVSTAT MAYPORT	19,467
NSWC PHILADELPHIA	17,997

Marine Corps TRI Data

Table 1. Change in Top 10 Marine Corps Chemical Releases and Transfers in Pounds

	1994	1995	1996	1997	1998	94-98%
ETHYLENE GLYCOL	237,821	86,708	38,002	5,954	13,731	-94%
DICHLOROMETHANE	155,986	98,300	15,000	-	-	-100%
METHYL ETHYL KETONE	144,653	128,588	127,600	59,250	55,971	-61%
1,1,1-TRICHLOROETHANE	76,062	48,289	-	-	-	-100%
TOLUENE	68,054	53,350	37,000	8,900	6,600	-90%
XYLENE (MIXED ISOMERS)	51,535	37,416	21,400	5,600	3,800	-93%
FREON 113	28,000	27,000	-	-	-	-100%
GLYCOL ETHERS	28,000	47,000	20,000	4,300	12,500	-55%
CHROMIUM	25,897	-	-	-	-	-100%
N-BUTYL ALCOHOL	24,001	8,200	-	-	-	-100%

Table 2. Change in Top 10 Marine Corps Installation Releases and Transfers in Pounds

	1994	1995	1996	1997	1998	94-98%
MCLB BARSTOW	322,011	87,961	31,304	16,846	36,536	-89%
MCLB ALBANY	282,273	254,340	133,200	32,490	13,293	-95%
MCAS CHERRY PT	263,370	216,673	110,091	33,664	39,472	-85%
MCB CAMP LEJEUNE	31,630	-	835	4,270	373	-99%
USMC BLOUNT ISLAND COMMAND	20,000	-	10,700	-	-	-100%
MCAS YUMA	1,050	1,028	-	-	-	-100%
MCB QUANTICO	34	36	37	37	24	-29%
MC RECRUIT DEPOT PARRIS ISLAND	5	-	-	-	-	-100%
MCB CAMP PENDLETON	-	5,376	-	-	-	-100%

Table 3. Top 10 1998 Marine Corps Chemicals
(Pounds released)

METHYL ETHYL KETONE	55,971
ETHYLENE GLYCOL	13,731
CERTAIN GLYCOL ETHERS	12,500
TOLUENE	6,600
XYLENE (MIXED ISOMERS)	3,800
BENZENE	72
CHLORINE	24
NAPHTHALENE	0
NA	
NA	

Table 4. Top 10 1998 Marine Corps Installations
(Pounds released)

MCAS CHERRY POINT	39,472
MCLB BARSTOW	36,536
MCLB ALBANY	13,293
MCAS BEAUFORT	3,000
MCB CAMP LEJEUNE	373
MCB QUANTICO	24
MCAS YUMA	0
MCB CAMP PENDLETON	0
USMC BLOUNT ISLAND COMMAND	0
NA	

Air Force TRI Data

Table 1. Change in Top 10 Air Force Chemical Releases and Transfers in Pounds

	1994	1995	1996	1997	1998	94-98%
DICHLOROMETHANE	1,534,992	1,116,400	704,119	588,776	413,363	-73%
METHYL ETHYL KETONE	840,937	584,235	507,067	406,933	316,214	-62%
PHENOL	363,920	234,835	92,745	87,281	66,841	-82%
TETRACHLOROETHYLENE	335,798	217,340	241,835	195,572	69,838	-79%
1,1,1-TRICHLOROETHANE	333,459	127,882	76,501	41,152	12,000	-96%
TOLUENE	225,563	133,460	90,287	58,658	44,753	-80%
ETHYLENE GLYCOL	162,300	40,916	144,009	77,534	113,384	-30%
CHROMIUM COMPOUNDS	151,886	56,898	52,246	49,470	35,500	-77%
GLYCOL ETHERS	139,390	30,193	44,076	45,396	44,100	-68%
MANGANESE COMPOUNDS	136,000	-	-	-	-	-100%

Table 2. Change in Top 10 Air Force Installation Releases and Transfers in Pounds

	1994	1995	1996	1997	1998	94-98%
TINKER AFB	1,569,614	1,080,881	728,670	520,020	325,423	-79%
ROBINS AFB	776,616	578,562	334,898	403,058	368,442	-53%
AF PLANT 06 (LOCKHEED MARTIN)	554,555	507,909	292,613	133,400	71,924	-87%
OGDEN AIR LOGISTICS CENTER (HILL AFB)	367,909	263,560	294,815	234,029	250,301	-32%
KELLY AFB	342,871	227,663	144,014	100,850	42,500	-88%
MCCLELLAN AFB	340,750	231,800	279,100	162,161	64,100	-81%
ARNOLD ENGINEER DEVELOP CNT	154,096	125,833	131,966	93,992	94,779	-38%
EDWARDS AFB	132,062	-	-	-	-	-100%
AF PLANT 44 (HUGHES SYSTEM)	123,430	35,502	18,800	3,100	-	-100%
AF PLANT 03 (ROCKWELL INTERNATIONAL)	123,413	37,355	46,026	-	-	-100%

Table 3. Top 10 1998 Air Force Chemicals
(Pounds released)

BROMOTRIFLUOROMETHANE	3,448
BROMOCHLORODIFLUOROMETHANE	1,525
DICHLOROTETRAFLUOROETHANE	346
DICHLORODIFLUOROMETHANE (CFC-12)	226
ETHYLENE GLYCOL	0
NA	
NA	
NA	
NA	
NA	

Table 4. Top 10 1998 Air Force Installations
(Pounds released)

ROBINS AFB	368,442
TINKER AFB	325,423
OGDEN AIR LOGISTICS CENTER (HILL AFB)	250,301
ARNOLD AFB	94,779
AF PLANT 4	84,200
AF PLANT 6	71,924
MCCLELLAN AFB	64,100
KELLY AFB	42,500
DAVIS-MONTHAN AFB	16,500
CAPE CANAVERAL AIR STATION	12,000

Defense Logistics Agency TRI Data

Table 1. Change in Top 10 DLA Chemical Releases and Transfers in Pounds

	1994	1995	1996	1997	1998	94-98%
TOLUENE	10,890	-	-	-	-	-100%
CYCLOHEXANE	8,037	-	-	-	-	-100%
BENZENE	6,353	-	-	-	-	-100%
NAPHTHALENE	2,919	-	-	-	-	-100%
METHANOL	2,908	-	-	-	-	-100%
XYLENE (MIXED ISOMERS)	2,648	-	-	-	-	-100%
BROMOTRIFLUOROMETHANE	1,372	3,685	645	800	3,448	151%
BROMOCHLORODIFLUOROMETHANE	960	707	1,687	800	1,525	59%
ETHYLBENZENE	494	-	-	-	-	-100%
DICHLORODIFLUOROMETHANE	100	485	1,513	500	226	128%

Table 2. Change in Top 10 DLA Installation Releases and Transfers in Pounds

	1994	1995	1996	1997	1998	94-98%
GRAND FORK FUEL SUPPORT POINT	10,872	-	-	-	-	-100%
VERONA FUEL SUPPORT POINT	5,516	-	-	-	-	-100%
CHARLESTON FUEL SUPPORT POINT	4,274	-	-	-	-	-100%
LANGER JEWEL BEARING PLANT	3,000	-	-	-	-	-100%
ESCANABA FUEL SUPPORT POINT	2,819	-	-	-	-	-100%
DEFENSE SUPPLY CENTER RICHMOND	2,432	5,101	4,854	2,200	5,545	128%
SEARSPORT FUEL SUPPORT POINT	1,780	-	-	-	-	-100%
SAN PEDRO FUEL SUPPORT POINT	1,200	-	-	-	-	-100%
TAMPA FUEL SUPPORT POINT	1,175	-	-	-	-	-100%
MELVILLE FUEL SUPPORT POINT	1,035	-	-	-	-	-100%

Table 3. Top 10 1998 DLA Chemicals
(Pounds released)

BROMOTRIFLUOROMETHANE	3,448
BROMOCHLORODIFLUOROMETHANE	1,525
DICHLOROTETRAFLUOROETHANE	346
DICHLORODIFLUOROMETHANE (CFC-12)	226
ETHYLENE GLYCOL	0
NA	
NA	
NA	
NA	
NA	

Table 4. Top 10 1998 DLA Installations
(Pounds released)

DEFENSE SUPPLY CENTER RICHMOND	5,545
NA	
NA	
NA	
NA	
NA	
NA	
NA	
NA	
NA	

An Explanation of Terms Used

Air Releases

Releases to air are reported either as stack or fugitive emissions. Stack emissions are releases to air that occur through confined air streams, such as stacks, vents, ducts, or pipes. Fugitive emissions include equipment leaks, evaporative losses from surface impoundments and spills, and releases from building ventilation systems.

Destruction

Toxic chemicals can be destroyed on-site using a variety of methods. After destruction, no further treatment or transfer to an off-site location is necessary. The quantity reported in the Form R represents the quantity of the toxic chemical that was destroyed in the on-site waste treatment operations, not the amount that entered any treatment operation.

Surface Water Releases

Releases to water include discharges to streams, rivers, lakes, oceans, and other bodies of water.

This includes releases from contained sources, such as industrial process outflow pipes or open trenches. Releases caused by runoff, including stormwater runoff, are also reportable under TRI.

Land Releases

Releases to land covered under TRI are those that occur within the boundaries of the reporting facility. Releases to land include disposal of toxic chemicals into landfills, land treatment/application farming (in which waste containing a listed chemical is applied to or mixed with the soil), surface impoundments (which are uncovered holding areas used to volatilize and/or settle waste materials), and other land disposal (such as spills, leaks, or waste piles).

Underground Injection

Underground injection is a contained release of fluid into a subsurface well for the purpose of waste disposal.

Recycling

Toxic chemicals can be either recycled on-site or sent off-site for recycling. The toxic chemicals may be recovered or regenerated by a variety of methods, including solvent recovery, metals recovery, and acid regeneration. Once recycled, these chemicals may be returned to the installation or sold for further processing or use. The quantity reported as on-site recycling in the Form R represents the quantity recovered at the facility, not the quantity that entered the recycling operation.

The quantity reported as off-site recycling in the Form R represents the quantity that left the installation boundary for recycling, not the amount recovered at the off-site location.

Treatment

Toxic chemicals may be sent off-site for treatment using a variety of methods, including biological treatment, neutralization, incineration, stabilization, and physical separation. These methods result in varying degrees of destruction of the toxic chemical.

POTWs

Toxic chemicals can be transferred off-site to a publicly owned treatment works (POTW). Wastewaters are transferred through pipes or sewers to a POTW. Not all TRI chemicals can be treated or removed by a POTW. The quantity reported in the Form R represents the quantity of the toxic chemical that left the installation boundary for POTW treatment, not the amount that was destroyed at the off-site location.

Disposal

Toxic chemicals sent off-site to a facility for disposal generally are either released to land or injected underground at the off-site location.

Energy Recovery

Toxic chemicals can be either processed on-site or sent off-site for energy recovery.

The toxic chemicals are combusted in industrial furnaces or boilers that generate heat or energy for use at that location. Treatment of chemicals by incineration is not considered to be energy recovery. The quantity reported as on-site energy recovery in the Form R represents the quantity of toxic chemicals that was destroyed in the combustion process, not the amount that entered the energy recovery unit. The quantity reported as off-site energy recovery in the Form R represents the quantity of toxic chemical that left the installation boundary for recovery, not the amount destroyed at the off-site location.